PUBLIC**FIRST**

THE DIGITAL OPPORTUNITY
of South Africa

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of South Africa
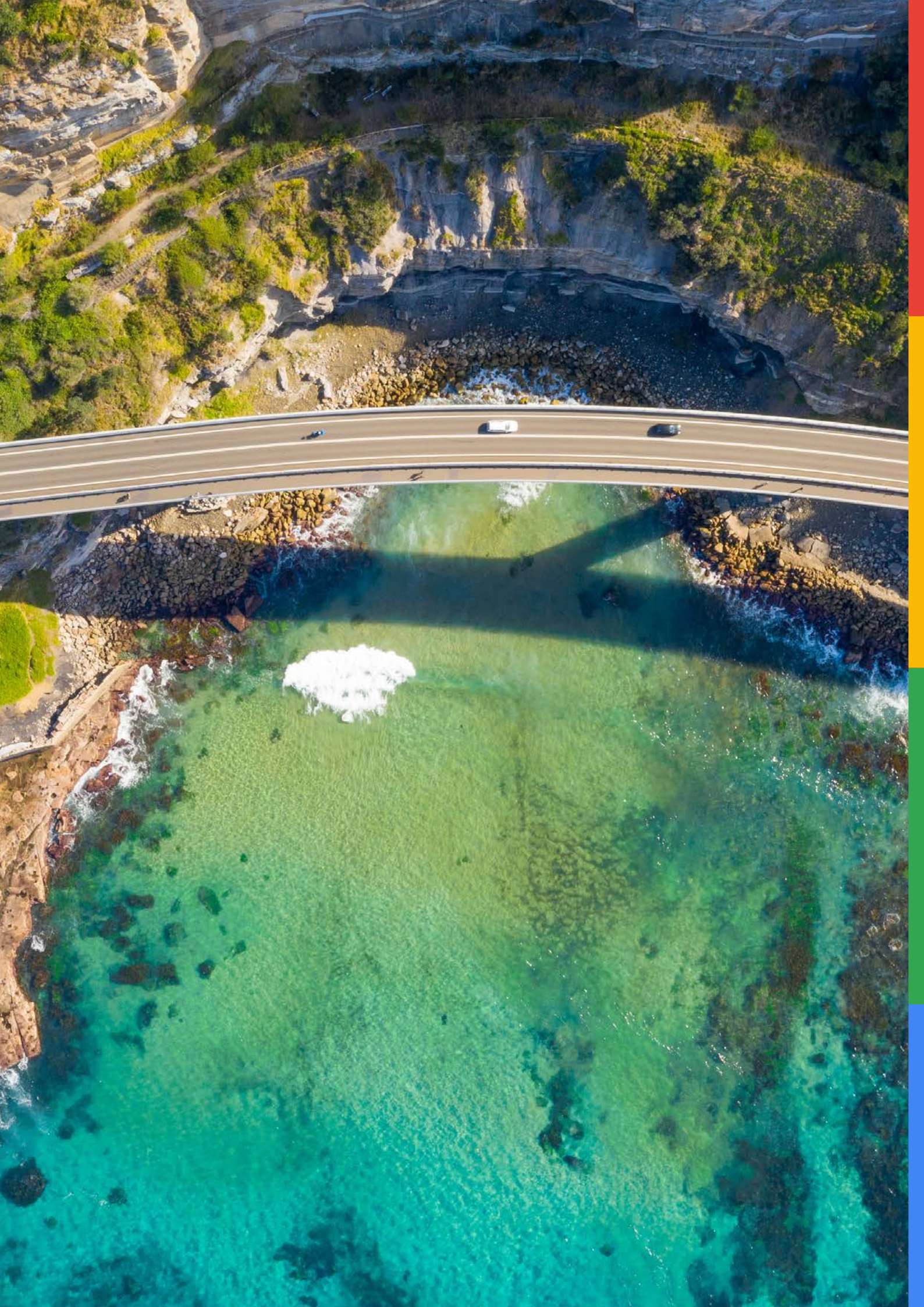
CONTENTS

EXECUTIVE SUMMARY

South Africa leads the continent when it comes to digitisation. With the highest mobile and internet penetration rates in Africa, the country is now primed to lean into emerging technologies such as artificial intelligence and cloud over the coming decade.

However, there is still work to be done to ensure everyone benefits.

Google's mission to organise the world's information, making it universally accessible and useful, is particularly relevant in catalysing equitable growth in South Africa. It is vital that everyone is given the opportunity to harness the benefits of technology.

That is also why Google has made a $1 billion commitment to Africa. According to new modelling by Public First, every R1 invested in digital technology in South Africa will create over R10 in wider economic value for South Africa by 2030. Google aims to further unlock the digital economy through its investments, initiatives and product innovations.

To understand the scale of this opportunity, Google commissioned Public First to explore:

Google's Impact in South Africa

Including the economic and social impact of Google's products and services on individuals, workers, and businesses across the country.

South Africa's Digital Transformation

With an emphasis on the importance of investment in connectivity, cloud computing and artificial intelligence.

Our findings indicate that, with targeted interventions and supportive government policies, the country can harness its young population, dynamic culture, and entrepreneurial vigour to consolidate its position as a digital front runner.

IN NUMBERS

Technology has the potential to deliver significant economic prosperity to South Africa.

$ x10

Digital technology is one of the most powerful ways for South Africa to boost its economic growth. Every **R1** invested in technology creates on average over **R10** for the country's wider economy.

$1bn

In 2021, Google announced $1 billion of investment in Africa to support a range of priorities, from improved connectivity to investment in startups over a five year period.

R118bn of economic activity
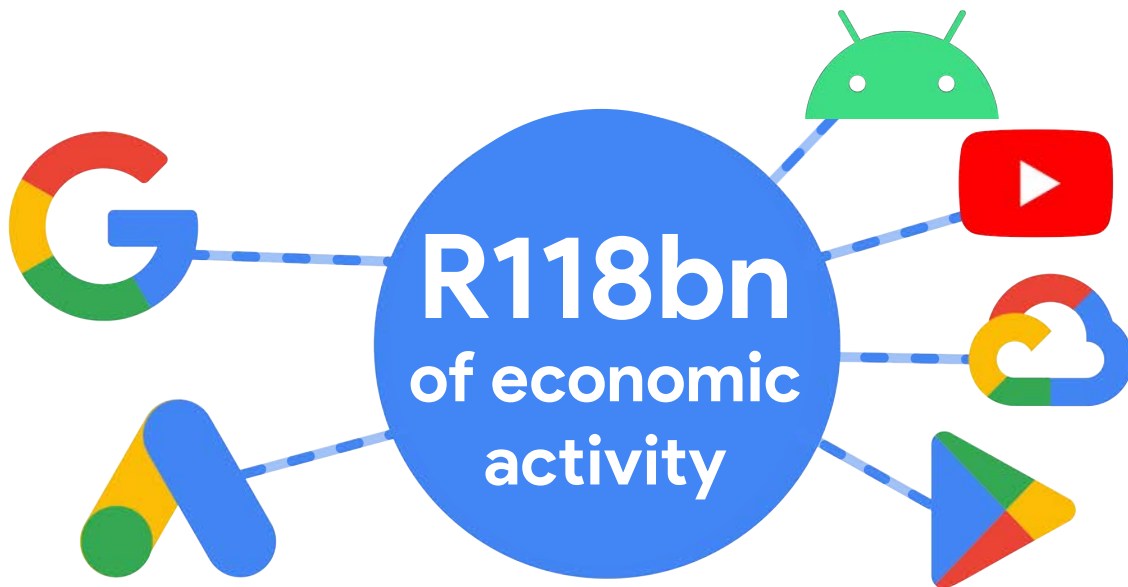
Google Search, Google Play, Android, YouTube, Google Cloud and Google Advertising helped provide an estimated R118 billion of economic activity for businesses, nonprofits, publishers, creators and developers across South Africa in 2023.

Google also supports the day-to-day lives of individuals, communities & businesses in the country.

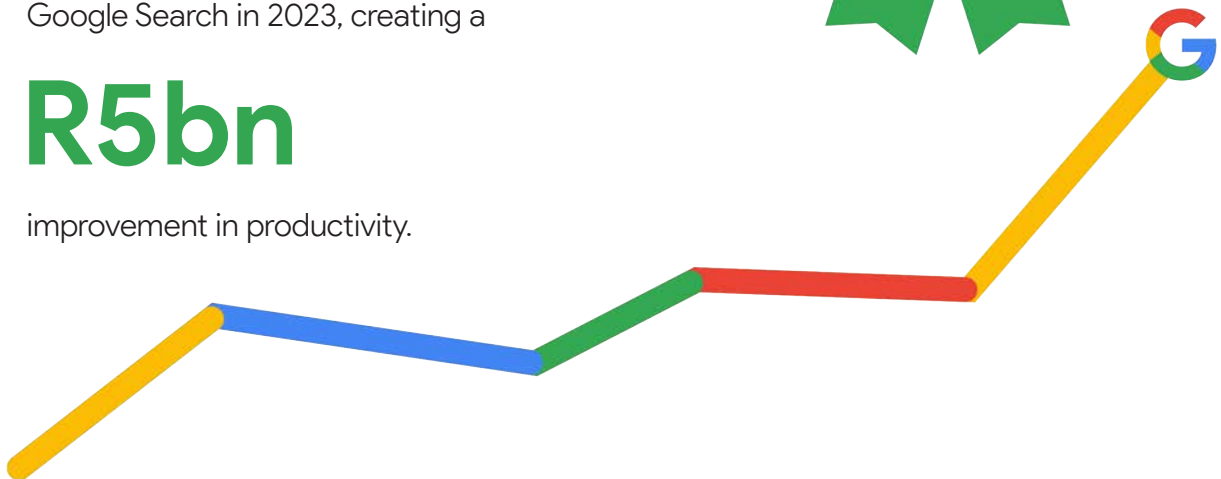Online adults in South Africa identified Google Search as the most helpful innovation of the last few decades.[1]

An estimated

300,000

young adults in South Africa have learned a new digital skill through Google Search in 2023, creating a

R5bn

improvement in productivity.

We estimate that Google Search and Google Workspace help knowledge workers save over **2.5 million** hours a week. This is equivalent to a **R72 billion** improvement in productivity for the country's economy.
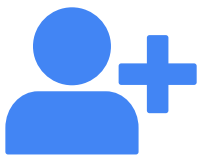
On average, businesses report that 20% to 30% of their new customers are acquired through Google Search.

YouTube has empowered a generation of digital entrepreneurs. **9 in 10** YouTube Creators agree that YouTube has given them a platform to share their creativity and culture with others - whilst also monetising their content.

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1   Respondents ranked Google Search as the most helpful innovation, followed by internet browsers, Wi-Fi, mobile phones, mobile banking and/or payment apps, the World Wide Wide, Google Maps, Google Workspace, WhatsApp and YouTube.

This all contributes to South Africa's digital potential.

5.7% Using Public First's internet connectivity index, we estimate that a 1 percent increase in connectivity is associated with a 5.7% increase in GDP.[2]

R167bn Cloud computing could increase the economy of South Africa by an estimated R167 bn.
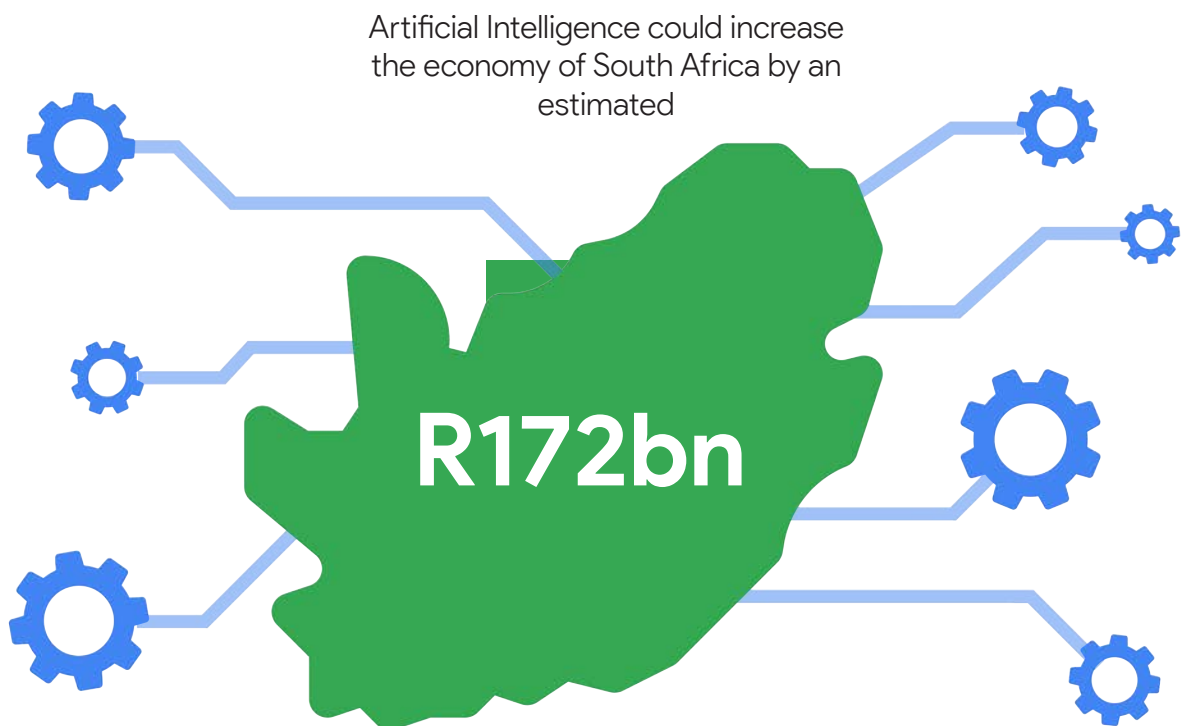
Artificial Intelligence could increase the economy of South Africa by an estimated

R172bn

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2   This index takes into account the population's access to fixed and mobile broadband, its relative affordability and overall data consumption.

FOREWORD

In 2021, Google committed to invest **$1 billion** in Africa to support the continent's digital transformation. Our initiatives have focused on enabling fast, affordable internet access for more Africans, building helpful products; supporting entrepreneurship and small business, and helping nonprofits to improve lives across Africa.

Three years on, we have made significant investments in the region and will deliver our commitments by 2026. We commissioned this independent report by Public First to contextualise the scale of opportunity in South Africa, and to evaluate the impact of Google's innovations.

This research reaffirms the importance of our contributions. Public First found that every **R1** invested in digital technology in South Africa will generate over **R10** in economic value by 2030.

In 2022, Google announced the establishment of its first-ever cloud region in Africa, located in South Africa. This cloud region aims to bring Google Cloud services closer to African businesses, allowing for faster, more reliable, and secure access to cloud resources.

Google has also supported South Africa's most promising startups to succeed, with over 4,000 SMBs graduating from Google's Hustle Academy since 2022. These individuals bring new dynamism to the country's tech sector, empowered by the skills learnt through the programme.

And there is still significant opportunity to be unlocked.

In 2024, we announced a new fibre optic cable route that will extend the Equiano Subsea Cable from South Africa to Portugal, as well as the Umoja line that will connect Kenya to Australia via South Africa. These infrastructure investments are crucial for bridging the digital divide and ensuring that everyone, regardless of their location, can benefit from the digital revolution.

Alongside our direct investments, Public First estimates that Google's tools and services grew South Africa's economy by an estimated **R118 billion** in 2023. From entrepreneurs using Google Workspace to build their businesses to students leveraging Google Search for their studies, these individuals inspire us to continue pursuing our mission of driving digital transformation in the continent.

Paul Mayanja
COUNTRY DIRECTOR (INTERIM)
GOOGLE

ABOUT THIS RESEARCH

In this paper, we used a range of different methods to quantify the economic impact and helpfulness of Google's products and services.

Economic Modelling

Building on the precedent of previous Google impact reports from markets including the UK, the United States, and Europe, we used traditional economic modelling built upon third-party estimates of Google market size across South Africa, and standard returns on investment (ROI) to measure the economic activity driven by Google's core products. To learn more about our modelling approach, please see the Methodology section in the report's appendix.

Opinion Polling

Working with independent providers Dynata, we conducted extensive online polling of 979 online adults across South Africa. At the same time, we polled 265 senior business leaders from small, medium and large online businesses, representing a range of different industries. We also conducted an online survey of 523 YouTube Creators based in South Africa. Public First is a member of the Market Research Society. The full tables for all the data used in this report are available to download from our website.

While Google commissioned this report, all information in this report is derived or estimated by Public First analysis using both non-Google proprietary and publicly available information. Google has not supplied any additional data, nor does it endorse any estimates made in the report. Where information has been obtained from third party sources and proprietary research, this is clearly referenced in the footnotes.

INTRODUCTION:

GOOGLE'S COMMITMENT TO SOUTH AFRICA

Google's products and services are helping to support South Africa's digital evolution. By prioritising affordable access for all South African users, Google has empowered millions of South Africans to connect to the internet for the first time and equipped thousands of businesses and creators with essential digital tools.

Google continues to make significant commitments to South Africa's future potential. **In 2021, Chief Executive Sundar Pichai announced that Google would invest a further $1 billion in Africa** over a five year period to support a range of priorities, from improved connectivity to investment in startups.[3]

This includes:

Establishing the First Google Cloud Region in South Africa

A new Google Cloud region in South Africa is helping local businesses innovate and grow, contributing more than a cumulative R39 billion to the country's GDP and supporting the creation of more than 40,000 jobs by 2030.

Building Connectivity Infrastructure

Google is expanding its network infrastructure through the Equiano subsea cable and dedicated Cloud Interconnect sites in cities including Johannesburg and Cape Town.

Supporting South African Entrepreneurs

Initiatives like the Black Founders Fund, Hustle Academy, and Google Business Profiles aim to support South African entrepreneurs, small businesses, and job seekers through funding, training, and skill development programs.

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3   Google, 2021

Apart from their direct investments, Google's products and services are already driving the growth of South Africa's digital economy:

Google Search and Ads help South African companies connect with new customers, both locally and globally.

Google's platforms, including YouTube and the Play store, offer ways for South African businesses to digitally distribute their services, as well as for content creators and developers to share their ideas with the world.

Google's tools, such as Workspace, Cloud and Gemini, help increase the productivity of South African companies and workers.

Translating Google's impact into economic terms, we estimate that Google Search, Google Play, YouTube, Google Cloud and Google advertising tools have delivered R118 of economic activity for South African businesses, nonprofits, publishers, creators, and developers in 2023.

In other words, through using Google's tools, businesses, nonprofits, publishers, creators, and developers in the country were able to grow, thrive, and create employment opportunities worth R118 billion in a single year.

Putting Google's R118 billion impact into context:

R67bn Estimated cost of hosting the 2010 FIFA World Cup

R4bn Estimated cost of the Leonardo skyscraper in Johannesburg

What is economic activity?

Economic activity refers to the actions that involve the production, distribution, and consumption of goods and services.

1. **Production:** Creating goods and services. This includes manufacturing, farming, mining, and other industries that produce tangible products, as well as services like healthcare, education, and entertainment.

2. **Distribution:** Moving goods and services from producers to consumers. This includes transportation, logistics, marketing, and retailing.

3. **Consumption:** The use of goods and services by consumers and businesses. This drives demand, which in turn stimulates further production and distribution.

Economic activity can be measured in various ways, such as Gross Domestic Product (GDP), employment rates, and business revenues. It reflects the overall health and dynamism of an economy.

GOOGLE'S PRODUCTS AND SERVICES

Search

A powerful search engine that allows users to find information on the internet quickly and efficiently.

Gemini

Google's most capable AI technology that supports an entire ecosystem – from the products that billions of people use every day, to the APIs and platforms helping developers and businesses to innovate.

Maps

Comprehensive navigation services, offering real-time traffic updates, directions, business information, and street-level imagery to help users explore the world.

Youtube

A video-sharing platform where users can upload, watch, and interact with videos, ranging from entertainment and music to educational content and vlogs.

Photos

A photo storage and sharing service that offers unlimited cloud storage for photos and videos, along with powerful editing tools and automatic organisation features.

Gmail

A free email service that provides users with a secure, efficient, and user-friendly platform for keeping in touch with others.

Workspace

A suite of cloud-based productivity and collaboration tools, including Gmail, Docs, Drive, Calendar, and Meet, designed to enhance teamwork and streamline business operations.

Translate

A translation service that supports over 100 languages, allowing users to effortlessly translate text, speech, images, and web pages.

Android

An open source operating system for mobile devices, offering a customizable and user-friendly interface, a vast ecosystem of apps, and seamless integration with Google services.

Ads

An online advertising platform that allows small and large businesses to reach targeted audiences and drive measurable results through pay-per-click campaigns.

Google Cloud

A suite of cloud computing services, including data storage, machine learning, and computing power, enabling businesses to innovate and scale efficiently.

GOOGLE'S WIDER IMPACT IN SOUTH AFRICA

Building More Helpful Products

Since its official founding in 1998, Google has sought to organise the world's information and make it useful in increasingly innovative ways. When asked, online adults in South Africa identified Google Search, Google Maps, Google Workspace and YouTube as being among the ten most helpful innovations of the last few decades.

Online adults in South Africa identified Google Search, Google Maps, Google Workspace and YouTube as being among the ten most helpful innovations of the last few decades.

Google Search is an indispensable resource for **learners.** Whether it's researching facts, comparing prices, troubleshooting technical problems, staying updated with the news, or performing basic calculations, Google Search meets a wide range of needs:

62% of online adults strongly agreed that Google Search is essential to their daily lives

63% of online adults strongly agreed that Google Search is helpful

66% of online adults strongly agreed that Google Search is easy to use
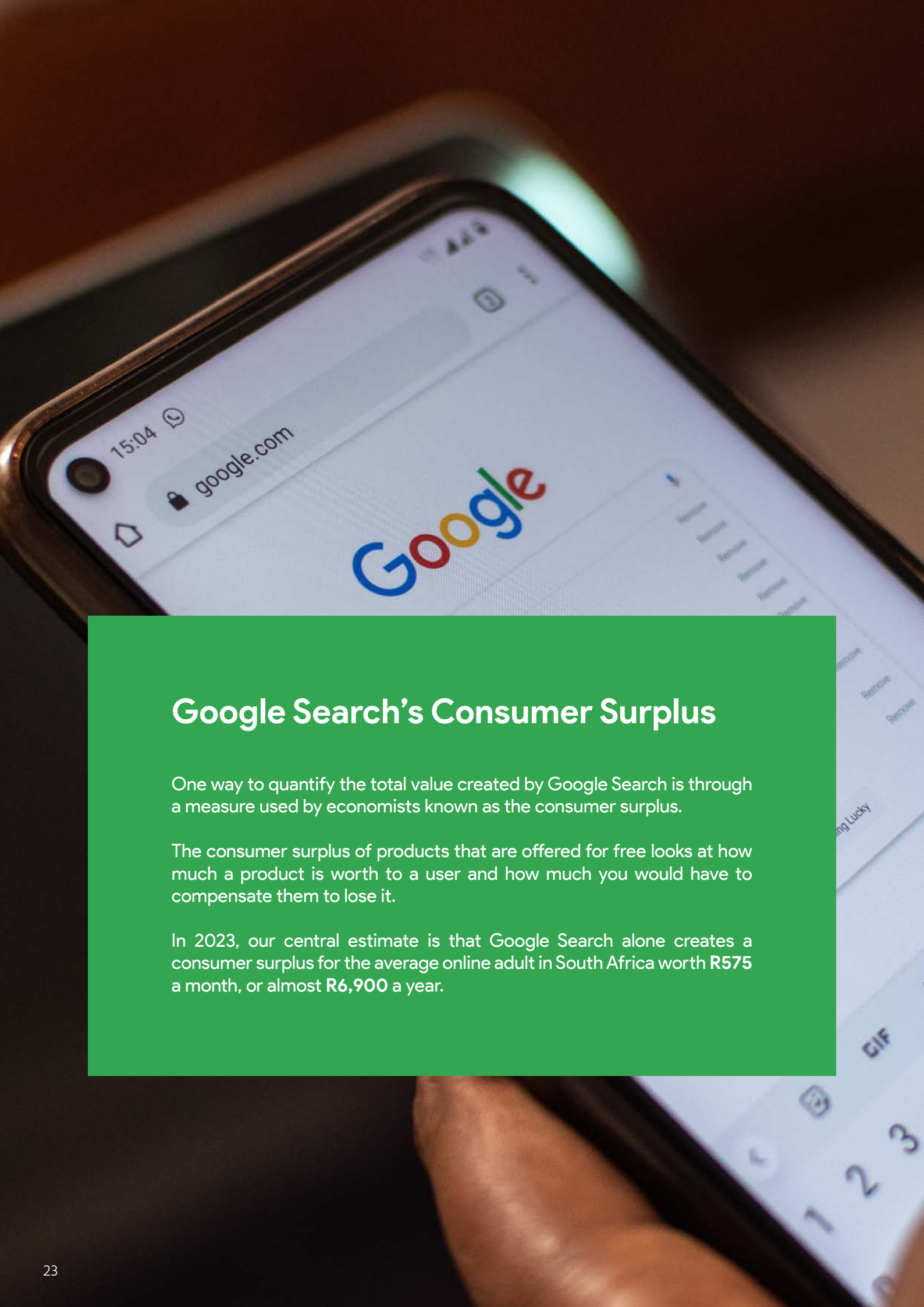
Google Search's Consumer Surplus

One way to quantify the total value created by Google Search is through a measure used by economists known as the consumer surplus.

The consumer surplus of products that are offered for free looks at how much a product is worth to a user and how much you would have to compensate them to lose it.

In 2023, our central estimate is that Google Search alone creates a consumer surplus for the average online adult in South Africa worth **R575** a month, or almost **R6,900** a year.

When it comes to **travelling efficiently**, mobile apps like Google Maps simplify navigation across South Africa - with Google Street View now even offering virtual tours of Johannesburg Zoo.

46% of online adults reported using Google Maps to look for public transportation routes or times

57% of online adults reported using Google Maps to avoid traffic congestion or public transport delays

When it comes to **communicating** with others, Google Translate helps traverse South Africa's diverse linguistic landscape - supporting eleven of the country's official languages, including Afrikaans, Southern Sotho, isiXhosa, isiZulu, isiNdebele, seTswana, and Swati.

Mhoro Nnọọ
Sawubona Mbote
Sannu Habari Akkam muraho Lumela
Adu
Hallo Hello
Mholo ን አይ Moni Aw ni Baara
Mholo

Supporting Election Integrity

According to our research, 68% of online adults in South Africa have used a Google product to learn more about a politician or an election, emphasising the important function that Google plays in connecting South Africans to information.

2024 marked the country's 30th anniversary of democracy, with voters going to the polls for a general election on 29th May. Google therefore undertook numerous steps to support election integrity.

When people used Google Search for topics like "how to vote," they found information about ID requirements, voting stations and more — linking to authoritative sources from Google's partners such as the Independent Electoral Commission of South Africa (IEC).

Additionally, any advertisers wishing to run election ads on Google were required to complete an identity verification process and display an in-ad disclosure that clearly showed who paid for the ad.

In collaboration with IEC, Google worked with high-risk users, like campaign and election officials, to improve their security and to educate them on how to use Google's products and services to connect with voters and manage their digital presence.

Google also then funded a fact-checking coalition led by Africa Check with South African media, working together to fact-check claims made by political parties, provide voters with reliable, non-partisan information on key issues, and equip the public with the skills they need to identify election misinformation.

Ensuring Young People Succeed

Almost one-third of the South African population is under the age of 15.[4] Education is therefore paramount for young people, as it plays a crucial role in breaking the cycle of poverty, enhancing job opportunities, and spurring growth.

Many young adults (18-24) in our polling have already leveraged Google's tools to further their career development:

82% of young online adults said they had used Google Search in the last year to look for a new job

90% of young online adults said they had used Google Search to help with studying

62% of young online adults strongly agreed that their education would have been more difficult without Google Search

South Africa's youth are particularly eager to participate in the digital economy. An impressive 93% of online young adults recognize the importance of digital skills for their future careers.

As a result, many have turned to Google Search to develop their technical expertise. According to our research, over 300,000 young adults aged 18-24 acquired new digital skills through Google Search in 2023, leading to an estimated R5 billion increase in national productivity.

Moreover, over 4,000 individuals in South Africa have graduated from a Google Career Certificate Programme since 2018, with 77% of graduates experiencing positive career advancements within six months of completion.

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4   World Economic Forum, 2023; Statista, 2022

When asked about the possible opportunities presented by technology, young people said:

" Technology could advance the country's economy. "

Man, 18

" It could lessen unemployment in the country especially among young people. "

Man, 19

" There's hope that our energy crisis might be solved and we might be able to generate more electricity. "

Woman, 18

" Making education easily accessible especially in rural areas. "

Woman, 22

" It could improve and modernise infrastructure. "

Man, 21

Black Founders Fund
Excel@Uni

Excel@Uni supports disadvantaged students by providing comprehensive academic and personal development resources, ensuring they not only complete their university education but are also well-prepared for their future careers. By working with corporate partners and universities, Excel@Uni offers a seamless bursary application process and continuous support through one-on-one tutoring, peer mentoring, and career readiness resources.

Excel@Uni recently benefited from Google's Black Founders Fund. This initiative supports businesses with at least one Black founder, seeking to raise a round of funding to develop their next stage of growth. In addition to equity-free cash awards, Black Founders Fund recipients receive ongoing Google mentorship, Google Cloud credits, and product support to help them navigate every stage of their startup journey.

Empowering Entrepreneurs

South Africa's economy is fueled by a dynamic entrepreneurial spirit. Ranked top in Africa in the 2024 Global Startup Ecosystem Index, South Africa has cemented itself as a prominent tech hub, driven by significant start-up funding growth and innovation in cities like Cape Town and Johannesburg.

A considerable percentage of adults in South Africa identify as entrepreneurs, underscoring the crucial role of the informal economy throughout the country. Our research shows:

65% of online adults describe themselves as an entrepreneur

15% of online adults say they work as an entrepreneur full time

50% of online adults say they they are pursuing their own business as a "side hustle"

Entrepreneurs in South Africa depend on Google's accessible suite of tools and services to realise their business goals. Among the entrepreneurs surveyed, 82% reported using Google Workspace to organise their business operations effectively.

Google's tools are equally crucial for startups. According to our business survey, 78% of businesses under five years old agreed that internet tools such as Google Search, Gmail, Google Docs, Google Workspace, and Google Business Profile have significantly reduced startup costs.

To see South Africa's success grow further, Google is taking significant steps to champion ambitious young people across the country, helping them to overcome the challenges associated with starting a new business:

- **Google for Startup's Black Founders Fund** has supported 135 entrepreneurs in Sub Saharan Africa since 2021, with over **R167 million** of non-equity funding.

- **Google Startups for Sustainable Development** programme has supported entrepreneurs from over **100+ startups** across 20 African countries.

- **Google's Hustle Academy** has supported **4,000 SMBs** from across South Africa since 2022. In 2022, **over 75%** of South African Hustle Academy graduates reported a positive career outcome (e.g. new job, promotion, or raise) within six months of completion.

The Hustle Academy

TOSH Detergents

TOSH Detergents is a South African based business started by Lufuno Rasoesoe that focuses on creating environmentally-friendly and affordable cleaning products. The business aims to empower young leaders through sustainable job opportunities.

The organisation is an alumni of Google's Hustle Academy: a free, 5-day virtual bootcamp for small businesses in Kenya, Nigeria, and South Africa, focusing on building future-proof business success. This initiative offers tailored training including business strategy, digital marketing, and financial planning, directly addressing the areas where SMBs most commonly encounter challenges.

"The training I received at the Hustle Academy has been incredibly beneficial. It offered us concrete tools and strategies specifically tailored for businesses like ours. We've been able to improve our operational efficiency and better understand the dynamics of the South African market, which has been vital for our growth and ability to innovate within our means."

Lufuno Rasoesoe

Connecting Businesses With Customers

Google's products are boosting the competitiveness of South African businesses by connecting them to clients online. As internet usage continues to rise across the country - and, indeed, the continent - this digital linkage is becoming increasingly powerful.

Our consumer polling highlights that online adults consistently turn to Google tools like Search and Maps to discover local businesses and compare prices, underscoring the vital role these tools play in the digital marketplace.

86% of online adults said they had used Google Search or Shopping in the last month to compare the prices of products or services

82% of online adults said they had used Google Maps in the last month to find a local business

This is backed up by our business poll, where online companies widely reported that online search, online maps and paid search advertising were among the most effective ways they connected with customers. On average, **businesses reported that about 20%-30% of their new customers are acquired through Google Search,** demonstrating the significant impact of these digital tools on their growth.

Which, if any, of the following are the most effective ways your business connects with customers? Select all that apply.

Legend:
- Very important (blue)
- Quite important (yellow)
- Neither important nor unimportant (green)
- Somewhat unimportant (red)
- Very unimportant (dark grey)
- Don't know (black)

Categories (top to bottom):
- Word of mouth
- Online search angines
- Physical location
- Local advertising
- Social network advertising
- Other online advertising
- Online maps
- Paid search advertising
- Television advertising
- Print advertising
- E-mail advertising
- Through a dedicated app

Moreover, because Google's reach extends far beyond local boundaries, it enables businesses to connect with customers worldwide. **84%** of online businesses agreed that online search engines have made it simpler for international clients to discover their services. **We estimate that Google Search and Ads are supporting over R49 billion in exports every year.**

Boosting Productivity

Google's tools like Workspace, Search, Cloud, and Gemini help knowledge workers to perform better at their jobs. They can collaborate more effectively, learn necessary skills, and better analyse company data.

For many, these services are essential productivity tools. We estimate that Google Search and Workspace save workers over **2.5 million hours a week**, equivalent to a **R72 billion annual productivity boost.**

54% of online adults strongly agreed that Google helps them to be more productive at work

47% of online adults strongly agreed that their job would be very difficult or impossible if they did not have access to Google Workspace

45% of online businesses strongly agreed that Google's tools and services have helped accelerate the growth of their business

Gemini Pro Launches in South Africa

In February 2024, Google launched Gemini Pro in South Africa - making it the first African nation to get access to the advanced chatbot software. Google chose to launch Gemini Pro in South Africa after observing a dramatic increase in AI-related searches in the country, which surged by 370% in the last year and 650% over the last five years.

The Gemini Advanced model, Google's most sophisticated AI yet, will be accessible through a subscription service, offering 2TB of storage and integration with Google apps like Gmail, Docs, and Sheets. Users can expect superior performance in complex tasks such as coding, logical reasoning, and creative collaboration.

Gemini is expected to continue building capabilities to help workers keep on top of their emails, draft documents, query their company's existing data and do new analysis. **In our business poll, 76% of online South African companies told us they expected to use AI to help them automate administrative tasks in the next few years.**

Championing the Creator Economy

South African creators are making waves on YouTube, showcasing the country's vibrant diversity and boundless creativity. The platform has revolutionised content creation, empowering everyday South Africans to share their unique perspectives, grow their fanbase, and turn their passions into profitable ventures.

At the forefront of South Africa's YouTube scene is Tevin Musara, known to his followers as @Superherointraining, who has garnered almost 500 million views and 8.6 million subscribers for his relatable content.

To gain deeper insights into their experiences sharing content on YouTube, we polled hundreds of Creators from South Africa. **87%** of those surveyed agreed that YouTube had given them a platform they wouldn't have otherwise had, enabling them to connect with a wider audience and share their ideas like never before.

96% of Creators surveyed agreed that YouTube allows them to be creative

93% of Creators surveyed agreed that YouTube makes it easier to communicate to the world

96% of Creators surveyed started their YouTube channel to inspire others

YouTube provides an important platform for South Africans to share their culture with the world. Of the creators we polled, almost two-thirds (**65%**) had started their YouTube channel so that they could showcase their culture. In fact, more than 2 in 5 creators (**43%**) estimate that a majority of their viewers are outside of Africa.

Thato Rampedi
@ThatoRampedi

"I proudly share my African heritage on YouTube by weaving together the vibrant threads of community, family, friendships, and knowledge sharing. Through my content, I pass down the wisdom and insights I've gained from the platform, while also highlighting the rich talents of South African musicians through the music I feature. In my lifestyle content and vlogs, I share personal stories of my experiences as an African, offering a glimpse into my daily life and the beauty of African culture.

By sharing my heritage in this way, I aim to celebrate the diversity and richness of African culture, while also inspiring others to embrace and share their own cultural roots. Through my content, I hope to build a sense of community and connection among Africans and non-Africans alike, fostering a deeper understanding and appreciation of our vibrant continent."

As the domestic and global audiences of South African creators expand, they're able to turn their passions into profitable ventures. Creators can generate income through various avenues such as advertising, the YouTube Shorts fund, and brand partnerships.

55% of Creators surveyed agreed that YouTube has helped them to monetise their hobby or passion

72% of Creators surveyed agreed that YouTube has helped them to pursue their entrepreneurial ambitions

78% of Creators surveyed say it would be difficult or impossible to share their content in the same way if YouTube did not exist

For many South African creators, YouTube has become pivotal to their careers. **35%** of those surveyed identify as full-time professional creators, while an additional **38%** work part-time as content creators alongside another job.

These individuals continue to innovate, combining their creativity with cutting-edge technology to enhance their content. **40%** of respondents have already experimented with AI tools to support their creative process, and many creators expressed interest in using AI for tasks like translation, creating special effects, and generating fresh ideas.

Helping brainstorm new ideas

Translating your content into other languages

Helping you create different edits of your videos (eg different lengths)

Helping you create visual graphics

Helping you create special effects or higher production values

10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

● I would be interested in this   ● I would not be interested in this   ● Don't know
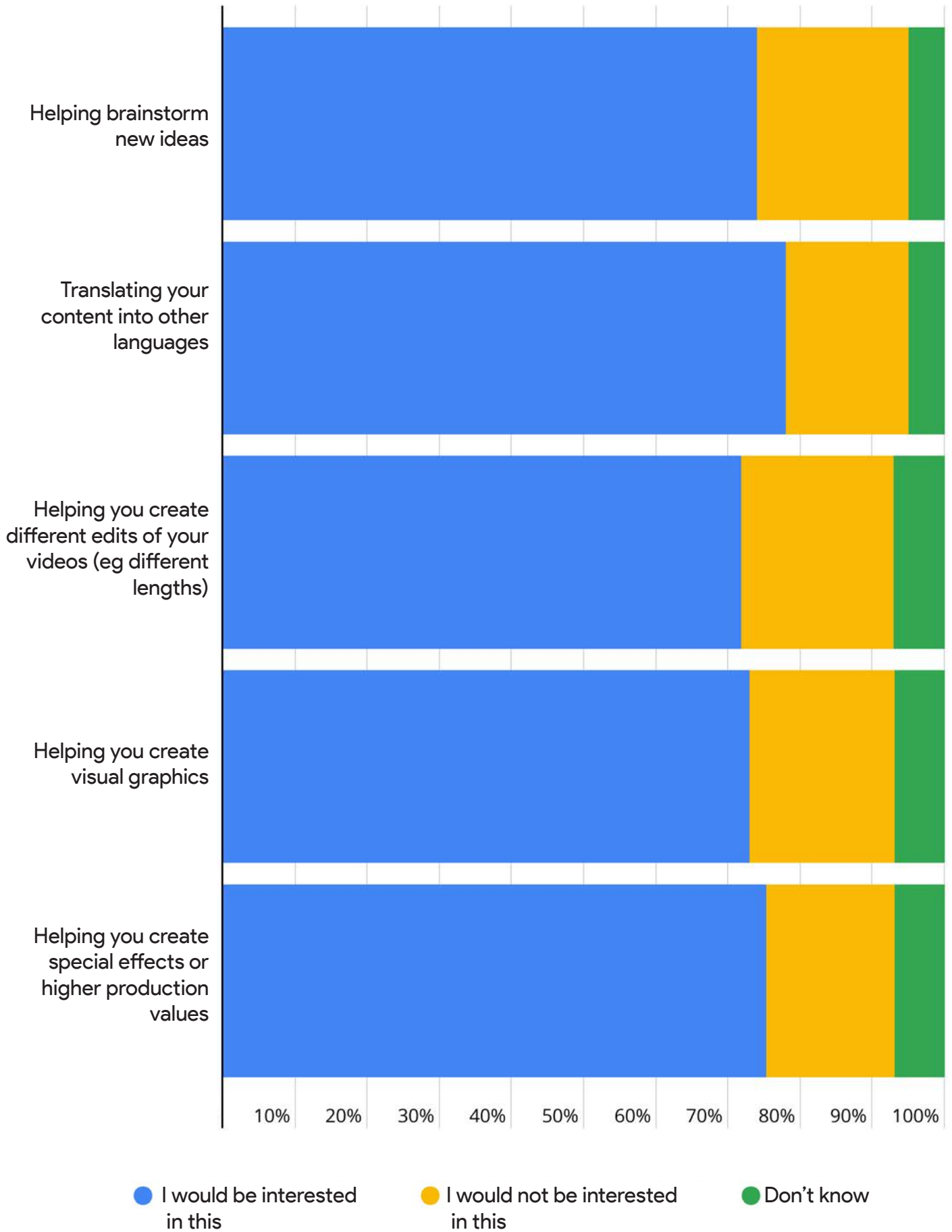
Supporting Developer Talent

South Africa has a young and growing developer population, with over 120,000 developers across the country.[5] Almost two-thirds of South Africa's developers are under the age of 35, and over half learned how to code informally, either through self-teaching, learning on the job, or coding bootcamp.[6]

Many of these developers create apps and services distributed through Google's mobile platform. Android, Google's free and open mobile operating system, allows local developers to reach a wide audience without the need to create multiple versions for different devices. In total, we estimate that **Android has saved South African developers over 126,000 days**, allowing them to focus on building new features instead of unnecessary porting.

Additionally, Google's Play Store facilitates global app distribution, reaching an audience of 2.5 billion users who make over 140 billion downloads annually.[7] In total, we estimate the Android App Economy generated over **R987 million** in revenue for developers in South Africa in 2023, while the Android developer ecosystem is supporting over **33,400 jobs** across South Africa.

5   e-Conomy Africa 2020
6   e-Conomy Africa 2020
7   How Google Play Works

Google Developer Groups
BallTalent, South Africa

Google Developer Groups are open to anyone who is interested in learning about Google's technologies, connecting with other developers, and growing their skillset. Participants are able to learn about a range of technical topics through hands-on workshops, training, hackathons, events, talks and meetups. There are over 150 active chapters across Sub-Saharan Africa.

In South Africa, friends Lesego Ndlovu and Simon Mokgotlhoa learnt how to code with support from Google Developer Group events in Johannesburg. With their new skills, they built BallTalent, an app that helps local soccer players get discovered by professional soccer clubs. The pair have since launched a Google Developer Group of their own in Soweto, the biggest township in South Africa.

"We watched videos on the Chrome Developers YouTube channel and learned HTML, CSS, and JavaScript, but we didn't know how to make an app, deliver a product, or start a business. [...] We learned about the code as the business grew. It's been a great journey."

SOUTH AFRICA'S DIGITAL TRANSFORMATION

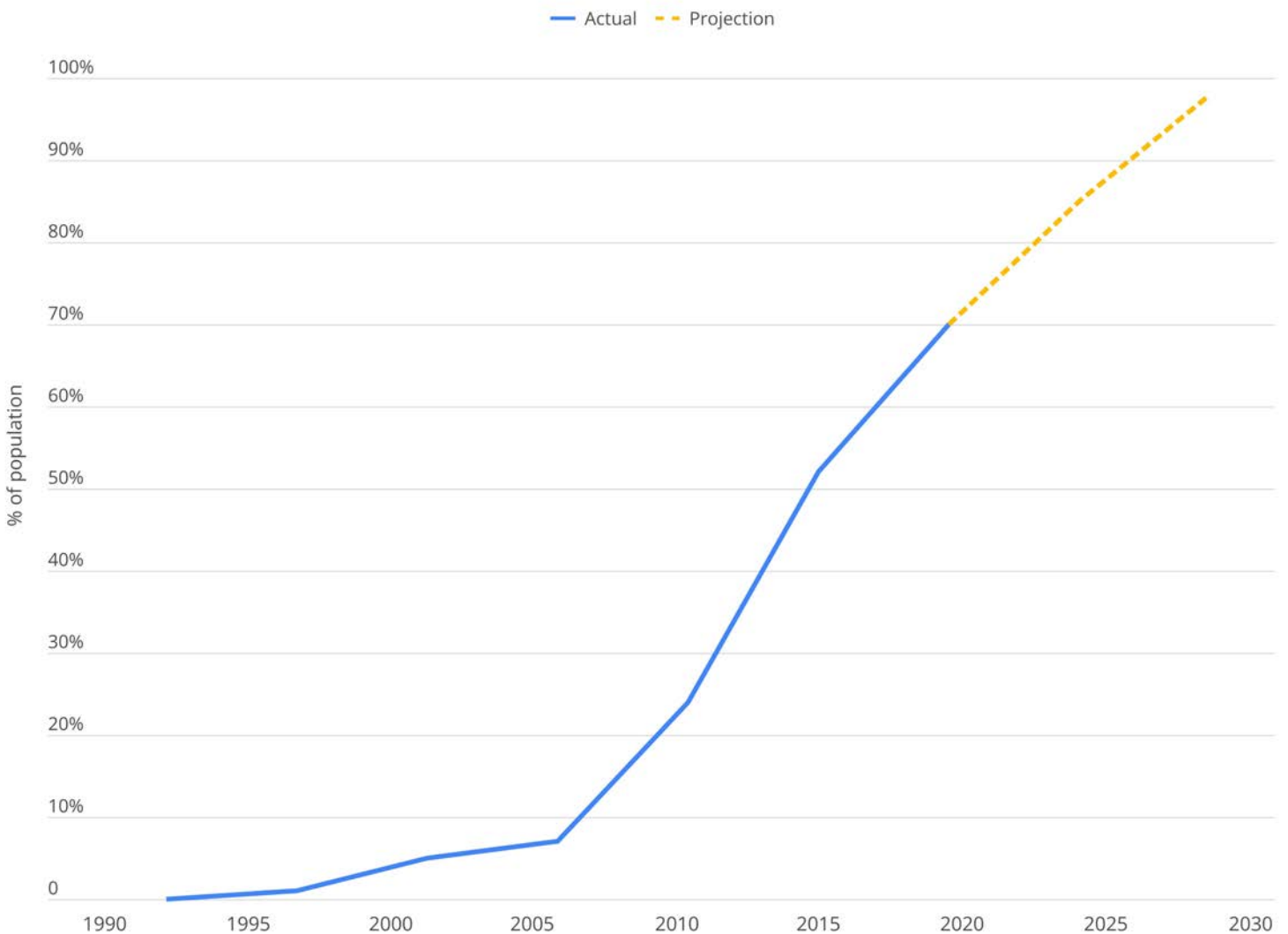# Investing in Digital

South Africa is at the forefront of Africa's technological revolution.

The country has seen significant growth in internet usage over the past decade, with adoption rising from 10% to 75% between 2009-2024.[8] By 2030, we estimate that internet adoption could reach **87%** of the population.

Internet adoption in South Africa

8   Digital 2024: South Africa; World Bank

Internet adoption has a significant spillover impact on growth: both increasing the productivity of companies that already exist, and supporting the creation of entirely new sectors. **Over the last five years, the overall revenue derived from cloud, digital advertising and e-commerce has more than doubled in key internet markets in Africa.** By 2025, Google-commissioned research from Accenture estimates that the share of GDP supported by the Internet could increase to over 5%.[9]

Looking further to the future, widespread connectivity is then crucial for leveraging emerging digital technologies that will further drive economic growth and social inclusion.

Ranked as the most innovative mainland country in Africa in the 2022 Global Innovation Index, South Africa is embracing the next frontier of technologies as they evolve.[10] The establishment of key institutions like the AI Institute of South Africa (AIISA) and the Centre for Artificial Intelligence Research (CAIR), coupled with ambitious government initiatives such as the Presidential Commission on the Fourth Industrial Revolution (PC4IR), highlight the country's commitment to creating a competitive global presence.

South Africans certainly see the potential of digital technology. **56%** of online adults in South Africa are optimistic about the impact technology will have over the next decade, compared to just 16% who are pessimistic. **58% of online adults strongly agree that South Africa should invest more in digital skills and infrastructure to support new technology.**

Now is therefore the time to seize this opportunity. Our research confirms that digital technology can be a powerful catalyst for South Africa's success, with mobile broadband, cloud computing, and AI being crucial to unlocking success over the next decade. **Ultimately, we estimate that every R1 invested in these technologies will create on average over R10 for South Africa's economy by 2030.**

9   e-Conomy Africa, 2020
10   Founders Factory Africa, 2024; University of Johannesburg, 2023

When asked about the possible impact of technology in their country, adults from South Africa said:

> It could improve the economy and lessen unemployment in the country especially among young people.

Man, 19

> Technology can improve access to quality education through e-learning platforms and digital resources.

Man, 26

> It could create devices that help the disabled people to do their daily tasks without struggling.

Woman, 23

> It will make it easier for people to acquire information quickly when they need it rather than waiting to ask someone. It will also give people access to new trends happening globally so as to better their lives and get new ideas of how to manage or fix things.

Woman, 22

> It could create job opportunities and increase entrepreneurial opportunities.

Man, 18

> It could create new renewable sources of energy and a proper substitute to the current source of energy used in my country.

Man, 24

Connectivity

Improving internet access, reliability, and speed is essential for advancing South Africa's digital transformation. Despite considerable advancements nationwide, around 28% of South Africans still do not have access to the internet.[11] Hence, further efforts are needed to ensure fair infrastructure coverage, access, and quality.

Moreover, our polling then highlights that even connected consumers and businesses would welcome improved connectivity infrastructure.

69% of online adults strongly agreed that they wanted access to faster internet speeds

72% of online businesses strongly agreed that fast and reliable internet is essential to their business' day-to-day operations

Numerous studies highlight the crucial role of boosting internet connectivity and adoption in driving broader economic growth. According to Public First's internet connectivity index, a **1%** increase in connectivity correlates with a **5.7%** rise in GDP.[12]

Submarine fibre optic cables, or subsea cables, are vital to the internet's infrastructure, enabling high-capacity, low-latency data transmission essential for global communication. Without these cables, internet speed and reliability would drastically decline, hindering our ability to connect and share information worldwide.

Google's Africa Connect initiative aims to enhance internet speed and reliability in countries like South Africa. This initiative promises faster downloads, seamless video calls, and overall improved internet experiences for individuals and businesses alike. Additionally, the initiative aims to reduce the cost of internet services, making them more accessible to a broader population.

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11   Datareportal, 2024.
12   This index takes into account the population's access to fixed and mobile broadband, its relative affordability and overall data consumption.

Equiano Subsea Cable
Connecting South Africa to Europe

The Equiano subsea cable, fully funded and laid by Google, is a high-capacity internet cable running under the ocean to connect Africa to Europe. It runs along the West Coast of Africa, between Lisbon, Portugal and Cape Town, South Africa.

The Equiano cable is state-of-the-art infrastructure based on space-division multiplexing (SDM) technology, with approximately 20 times more network capacity than the last cable built to serve this region.[13]

Equiano will have a direct impact on connectivity in South Africa, resulting in faster internet speeds, improved user experience, and reduced internet prices. By 2025, due to Equiano, internet speeds in South Africa are expected to almost triple, and prices are expected to drop by over 16%. Improved speeds and lower prices are expected to increase internet penetration by more than 7% in South Africa.

Between 2022 and 2025, average year-on-year real economic growth is expected to increase by 0.32% points in South Africa due to Equiano. By 2025, real GDP in South Africa is expected to be higher by R108 billion relative to what it would have been without the cable

13   Google, 2023

46

Umoja Subsea Cable
Connecting South Africa to Australia

Further increasing the reach and reliability of digital connectivity for South Africa, Google has announced Umoja – the first ever fibre optic route to directly connect Africa with Australia. Anchored in Kenya, the Umoja cable route will pass through South Africa before crossing the Indian Ocean to Australia.

Umoja will enable South Africa to more reliably connect with other African countries and the rest of the world. Establishing a new route distinct from existing connectivity routes is critical to maintaining a resilient network for a region that has historically experienced high-impact outages.

Taara
Connecting Africa's Next Billion

Taara, X's moonshot for connectivity, extends high capacity connectivity from the subsea cables and fibre backbones further inland to expand Africa's internet network. Using beams of light over long distances, Taara's links deliver high-speed, low-latency connectivity.

Working with local internet service providers, Taara is delivering fast, affordable connectivity to tens of thousands of people who were previously unconnected or underserved in more than 20 communities across Kenya. Taara is now working to expand Africa's digital infrastructure in Kenya, Ghana, Democratic Republic of Congo, Tanzania, Zimbabwe, Rwanda, Malawi, Senegal, Nigeria, and South Africa.

As important as the underlying infrastructure is ensuring connected devices are affordable. Despite declining prices, the cost of smartphones remains a significant hurdle for many South Africans, with **nearly a third** citing it as their biggest barrier to getting online.

A majority of South Africans access the internet through a mobile device powered by Android, representing millions of people. This includes a cohort who would have been unable to access the internet at all without the affordability driven by the Android ecosystem. By providing Android as a free and open source operating system, Google enables manufacturers to build a wide range of devices at different prices, with some manufactured at costs as low as R900. Once online, users can access essential services like Search, Gmail, and YouTube at no additional cost.

Our polling found that **66%** of online adults in South Africa strongly agree that affordable smartphones and free internet services have enabled widespread internet use in their country. **In total, we estimate that Android's increased affordability has allowed an additional 4 million South Africans to access the Internet, who would not have otherwise been able to do so.**

Cloud Computing

Cloud computing services, like those offered by Google Cloud, drive today's critical internet services, enable groundbreaking technologies like AI, and provide companies with cost savings and top-tier security.

Research by Public First[14] and Deloitte[15] shows that investing in public cloud services yields an average net return of investment of over 2 to 1. Cloud computing facilitates new product development, cuts IT costs, enhances employee collaboration, and saves time. In total, we estimate that Google Cloud saves over 6.6 million hours for South African businesses a year.

Beyond cost savings, cloud services offer significant energy efficiency and sustainability benefits. Google data centres use 50% less energy than typical data centres and are powered entirely by renewable sources like wind and solar. By transitioning to Google Cloud, businesses have prevented over 4,200 tonnes of CO_2 emissions.

There is now real opportunity to scale these benefits across the South African economy. According to our estimates, only around 40% of companies in South Africa currently utilise cloud services. However, this figure is expected to rise by 20 percentage points by 2030, generating an additional R167 billion in economic value.

14   Public First, 2022
15   Deloitte, 2018

Google Cloud Region
Johannesburg, South Africa

Google is committed to laying the foundations required for South Africa to maximise on this technology. In January 2024, Google's first Cloud region in Africa was formally launched for customer use. Based in Johannesburg, the Cloud region is set to accelerate the African tech ecosystem, providing organisations with the resources they need to scale, innovate, and compete in the global marketplace.

According to research by AlphaBeta Economics for Google Cloud, the South Africa Cloud region will contribute more than a **cumulative R39 billion to the country's GDP,** and will support the creation of more than **40,000 jobs by 2030.**

Artificial Intelligence

Google and its parent company Alphabet have consistently been at the forefront of AI innovation. AI powers many of Google's most popular products, including Search, Maps, and Cloud, and Google's pioneering Transformer model set the stage for today's large language models. In early 2024, Google launched Gemini Pro in South Africa, making it the first African nation to get access to the advanced chatbot software.

The potential for AI to transform productivity in South African businesses and among workers is immense. **In total, we estimate that, by boosting workforce productivity, AI could increase the economy of South Africa by R172 billion.**

In our polling, over half (51%) of online adults strongly agreed that harnessing AI could significantly drive growth in South Africa.

66% of online adults were very interested in using AI to help protect them online

51% of online adults were very interested in using AI to eliminate mindless or repetitive tasks at work

50% of online adults were very interested in using AI to help warn them of a potential medical condition or health risk

Likewise, there is a strong interest among South African businesses in exploring AI, with approximately **7-in-10** online businesses believing that AI tools can be beneficial for a variety of applications, including data analysis and enhancing cybersecurity.

61% of online businesses thought it was very likely that AI would significantly improve the productivity of their business in the next few years
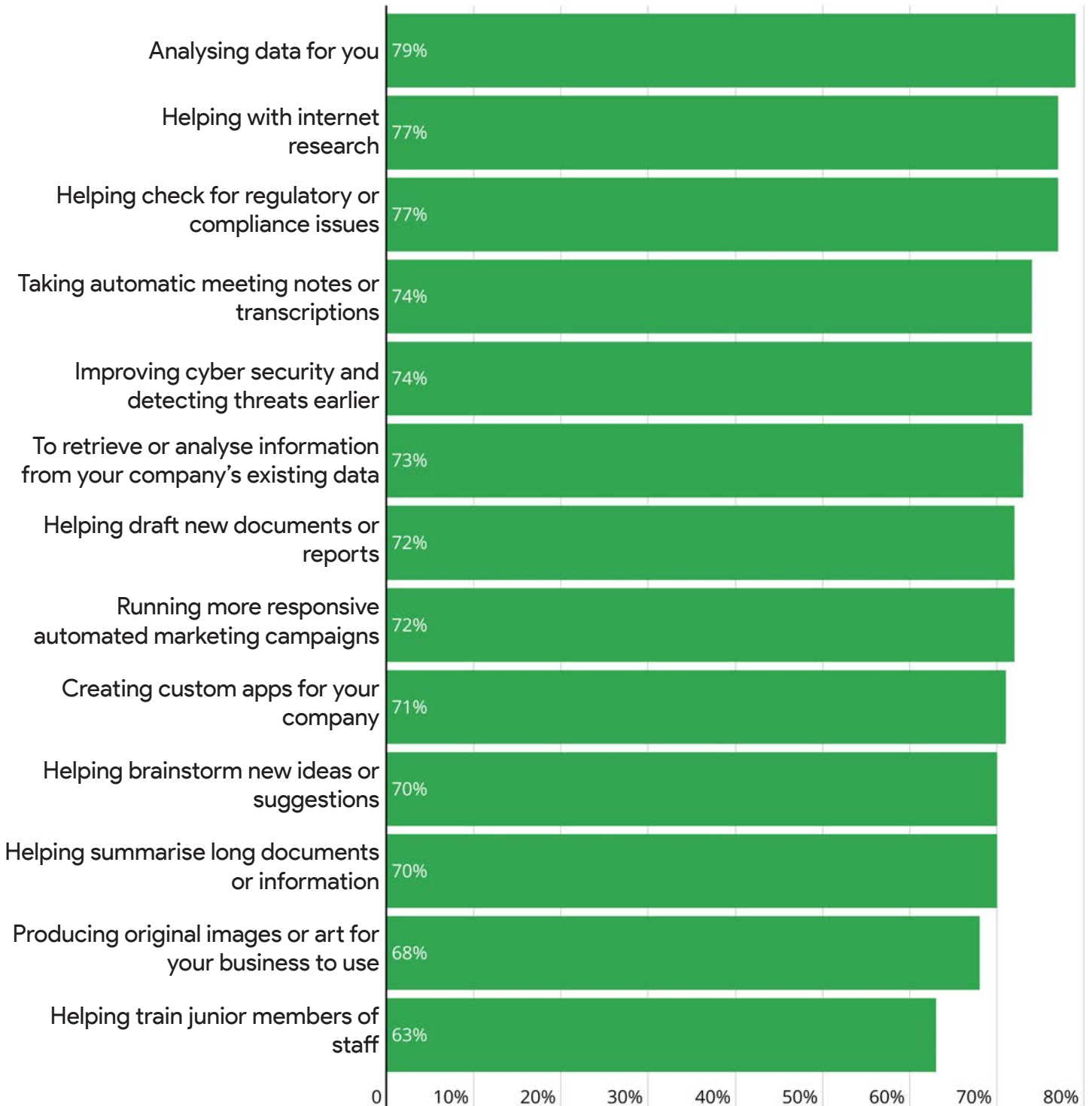
42% of online businesses thought that AI was the technology that provided one of the greatest opportunities for their business

56% of online businesses planned to invest in AI tools in the next few years
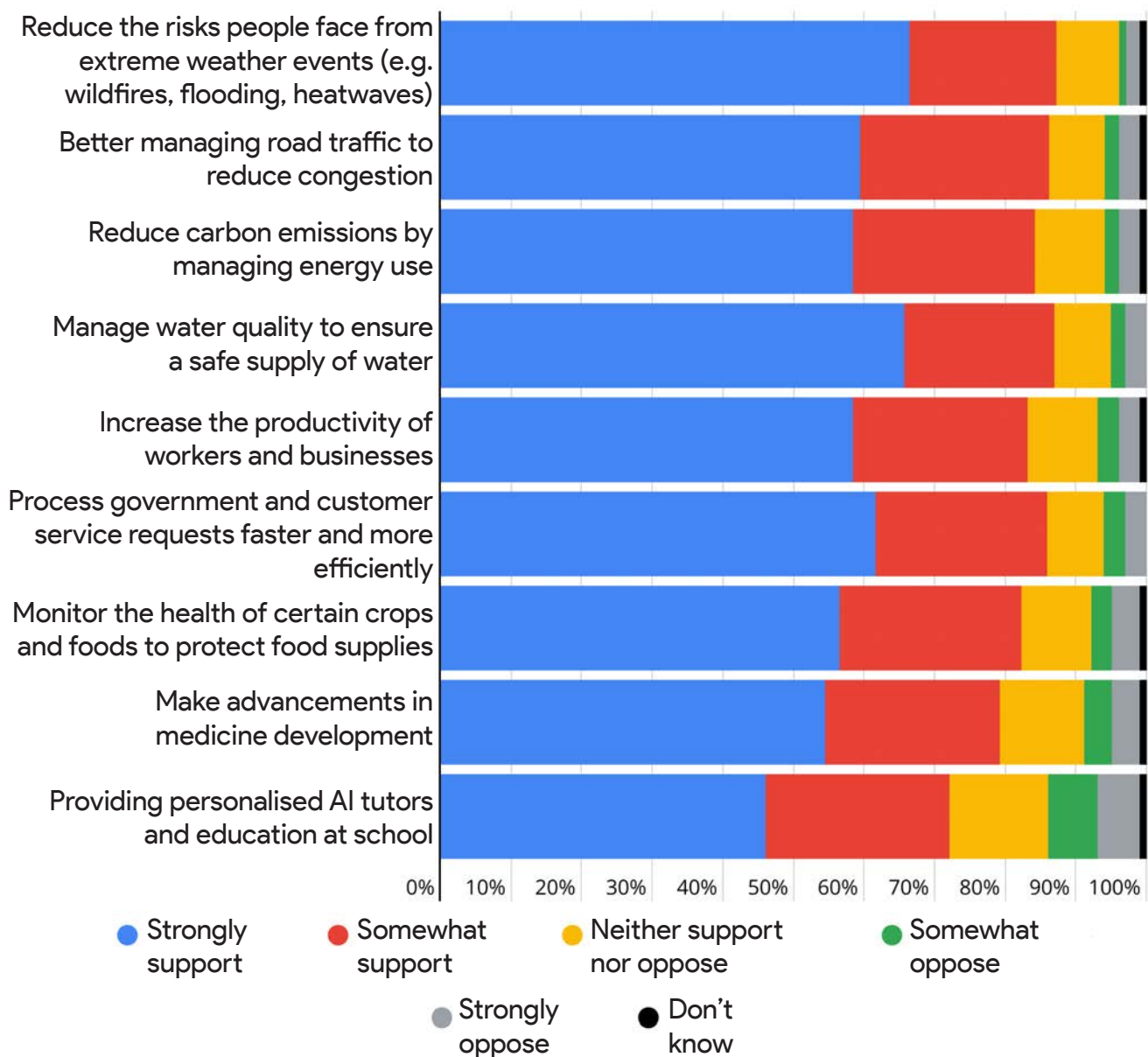
Which, if any, of the following use cases of gen AI tools do you think could be potentially helpful for your business?

Use case	Percentage
Analysing data for you	79%
Helping with internet research	77%
Helping check for regulatory or compliance issues	77%
Taking automatic meeting notes or transcriptions	74%
Improving cyber security and detecting threats earlier	74%
To retrieve or analyse information from your company's existing data	73%
Helping draft new documents or reports	72%
Running more responsive automated marketing campaigns	72%
Creating custom apps for your company	71%
Helping brainstorm new ideas or suggestions	70%
Helping summarise long documents or information	70%
Producing original images or art for your business to use	68%
Helping train junior members of staff	63%

AI presents transformative solutions to many of South Africa's enduring societal challenges. For instance, AI can aid in discovering new medicines, boosting agricultural productivity, early detection of extreme weather risks, and delivering personalised education.

When asked how they would like to see AI being used more widely in society, there was widespread support for a range of use cases:

Would you support or oppose AI being used more widely in society to do the following?

Legend:
- ● Strongly support (blue)
- ● Somewhat support (red)
- ● Neither support nor oppose (yellow)
- ● Somewhat oppose (green)
- ● Strongly oppose (grey)
- ● Don't know (black)

This aligns with Google's work to develop responsible AI that benefits society. Programs such as the Google for Startups Accelerator support South African innovators in developing AI solutions that positively impact both local communities and the broader world.

Google for Startups Accelerator:
AI First - Avalon

Avalon is a South African startup focused on simplifying and streamlining the healthcare experience for doctors and patients by leveraging AI tools. The company allows doctors to automate their patient management, billing and clinical documentation, while streamlining appointments and information for patients.

The business recently benefited from the Google for Startups Accelerator: AI First. The AI First programme is a 10-week equity-free accelerator program for Seed to Series A startups based in Africa or building Africa-centred solutions with technology.

The Accelerator programme is designed for startups that are building products or services that use artificial intelligence in a transformative way, backed by strong teams and a clear vision for how AI can be used to solve real-world challenges. Startups receive equity free support, mentoring and technical expertise from Google teams, training bootcamps, and more.

GOOGLE'S POLICY RECOMMENDATIONS FOR SOUTH AFRICA

The Digital Sprinters report published by Google in 2020 established a framework for policymakers to harness the economic potential of digital technologies. That framework is even more relevant today as countries seek to participate in the AI transformation.

Becoming an AI Sprinter — a country that harnesses AI to accelerate economic development — requires both widespread AI adoption and adaptation to local needs. A robust digital foundation is crucial, and the four AI Sprinters pillars offer a roadmap for building it:

Revolutionise infrastructure with 100% adoption of cloud-first policies

Cloud computing is essential for governments, local enterprises and organisations to deploy AI systems cost-effectively, securely and at scale — ensuring that AI is widely and inclusively deployed. Policymakers should advance cloud-first initiatives that prioritise cloud solutions over traditional IT systems.

Support people with national AI skills initiatives

AI promises to propel economies forward — but this can only happen if workers know how to use AI to enhance their productivity and expertise. Google.org's initial AI skilling commitment for developing countries is a first step. More collaboration between the public and private sectors is needed to build AI fluency, strengthen STEM education and increase online learning opportunities.

Modernise national data systems

High-quality datasets that represent diverse perspectives, languages and cultures are essential for training AI models effectively for local markets. Governments should commit to better utilising and sharing data to improve public services like health care, education, transportation and disaster response, and invest in the infrastructure needed to promote responsible use of data. Similarly, governments should enable trusted cross-border data flows to ensure models and systems are trained on rich, geographically diverse data.

Support AI-enabling regulation

Continued AI innovation — both in AI models and applications — requires the right regulatory framework, one that ensures that AI can be responsibly and boldly deployed. Governments should pursue risk-based and proportionate approaches to regulation; maintain privacy and copyright frameworks that enable use of publicly available information while respecting legitimate rights; support and contribute to the development of international technical standards for AI; and adopt national AI strategies.

METHODOLOGY

Calculations were done in USD and converted to South African Rands (ZAR) with the 2023 average exchange rate of 0.054 ZAR/USD.

Economic Impact

Google Ads

Following the precedent of past Google impact reports, we use third-party data to estimate the total size of the South African Google Ads market, combining our estimate of the paid search market with Statcounter estimates of Google's market share.

In order to produce estimates of the total size of the paid search market for South Africa we used PWC's Global Media and Entertainment Outline data.

Following the methodology of the US Google Economic Impact Report, we then scale this revenue by an assumed Return on Investment (ROI) factor of 8, from:

- Varian (2009) estimates that businesses make on average $2 for every $1 they spend on AdWords.
- Jansen and Spink (2009) estimate that businesses receive 5 clicks on their search results for every 1 click on their ads.
- Google estimates that search clicks are about 70% as valuable as ad clicks.
- Total ROI is then 2 * spend + 70% * 5 * 2 * spend – spend = 8 (spend).

AdSense

In order to estimate total Adsense revenues, we combined:

- Google's published Network Revenue for 2021, 2022 and 2023;
- An assumption on Traffic Acquisition Costs as a % of Network Revenue, based on past published TAC data;
- South Africa's share of non-video display spending, derived from PWC data.

Cloud

In order to estimate total Google Cloud revenues, we combined:

- Statista data on total public cloud revenue in South Africa and Google Cloud's market share;
- An assumption that every dollar invested in Cloud services by users generates a net return.

YouTube

In order to estimate the total spend on YouTube Advertising, we combined:

• YouTube's published global advertising revenue;
• South Africa's share of total global video display spend, drawing on PWC and Statista data;
• An assumed revenue share of 55%.

Android

In order to this estimate total Android revenues, we combined:

• Statistic data on total app revenue by country;
• Statcounter data on Android market share by country;
• Assumed developer share of revenue.

In addition to this, we conservatively assume that developers earn the same amount from indirect contract work as they do from app stores.

Potential Economic Impact of Generative AI

We drew on the US O*Net occupation database, which contains information on 51 different types of work activity for around ~800 types of occupation.

• Based upon Goldman Sachs' identification of the types of tasks exposed to automation by generative AI, we classified the proportions of tasks in each occupation that were susceptible to automation. This includes:
    • Excluding tasks with the highest level of complexity;
    • Excluding tasks which largely take place outdoors or have large levels of physical activity. (This leads to a relatively low level of automatability for e.g. agriculture and production occupations, which is one reason why the overall level of automatability is lower.)
• We aggregated this into broader economic categories based on their overall share of US employment and average wage bill, and then created our own crosswalk to convert the results from each occupation to the corresponding occupation in ISCO-08.
• We then applied to each country based on ILO data on employment and average wages per occupation. When data is missing, we impute based on a regression against GDP.
• Aggregate by wage bill occupation and sector to produce an estimate of the total possible improvement in labour productivity.
• Assumed capital intensity remained constant and converted this labour productivity improvement into an overall improvement in GVA.

Potential Return on Investment from Digital Technology

Our headline estimate is an equally weighted estimate of investing in:

- Mobile broadband and telecoms;
- Generative AI;
- Cloud.

Mobile Broadband

To estimate the potential ROI from mobile broadband, we:

- Drew on historic ITU data on mobile broadband subscriptions, and applied an S-curve adoption model to project forward likely adoption through to 2030.
- Used GSMA data to convert penetration data into an estimated overall penetration rate.
- Drew on a ITU / TAS (2019) regression on the impact of increased mobile broadband penetration on growth.
- Used ITU data on mobile broadband costs as a proportion of GNI per capita to estimate costs per user.

Cloud

To estimate the potential ROI from cloud, we:

- Estimated a weighted average of cloud spend per employee, based on Statista data running through to 2028, and then project this forward to 2030.
- Combined the results of two models to look at its impact on economic activity:
  - In the first model, we applied a direct ROI to overall cloud spend, based on the average reported ROI from Public First's own internal dataset on businesses reported ROI from cloud.
  - In the second model, we used a regression to translate this overall amount of cloud spend into an overall level of cloud prevalence for Nigeria. We then drew on a literature review of existing research on the connection between digital technology and business productivity (e.g. TAS (2023), OECD (2019)).

Generative AI

To estimate the potential return from AI, we:

- Drew on our estimate for the overall potential from generative AI (as above).
- Applied a 20 year S-curve diffusion model, starting in 2022, to look at the potential proportion of this impact that could be achieved by 2030.

Used our overall automatability estimate per economy as a proxy for the proportion of the workforce that is likely to be affected.

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